ABSTRACT

Location Data Diffusion and Location Discovery

A location discovery method uses location data items that originate at known locations (X,Y) and are passed to, and diffused between, entities (A,B) by short-range communication. Each location data item received by an entity (A,B) indicates a maximum distance of the entity from one of the known locations (X,Y). Each entity (A,B) prior to using a location data item for location determination or transferring it to another entity, is operative to increase the maximum distance indicated by the location data item to take account of movement of the mobile entity since receiving that item. A mobile entity (A) effects location determination by finding locations (40) simultaneously consistent with the maximum distances (31,36) it knows of and any applicable route constraints for how the location data items passed to the mobile entity. An example constraint is that vehicle mobile entities should follow roads (1,2,3). The maximum distance indicated by a location data item may also be increased to take account of transmission hops between entities and, indeed, in the case of static entities, it is these increases that build the maximum distance value.

(Fig. 5)